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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,265	09/13/2000	Takakazu Fukano	Q59604	8337
7590	09/10/2004		EXAMINER	
Sughrue Mion Zinn Macpeak & Seas 2100 Pennsylvania Avenue NW Washington, DC 20037-3202			MOUTTET, BLAISE L	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/661,265	FUKANO ET AL.	
	Examiner	Art Unit	
	Blaise L Mouttet	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 June 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) _____ is/are rejected.
- 7) Claim(s) 1-13 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 September 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4 pages</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input checked="" type="checkbox"/> Other: <u>Reasons for Allowance</u> . |

DETAILED ACTION

Priority

1. Applicant's claim for foreign priority is acknowledged. The foreign priority papers were received September 13, 2000.

Information Disclosure Statement

2. The Information Disclosure Statements filed January 4, 2001, May 29, 2001, May 11, 2004 and June 22, 2004 have been considered by the examiner.

Additional Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rocheleau et al. US 4,315,219 teaches a waveform generation circuit in which the amplitude of the voltage output from a digital to analog converter (3) is corrected based on a reference voltage. A memory (1) stores sample points of the waveform to be generated. Rocheleau et al. fails to teach or suggest that the memory stores a plurality of gradient data, each representing a local gradient of a driving waveform to drive a driving element or an accumulator that sums the gradient data.

Lange et al. EP 213 846 teaches a waveform generation circuit in which the amplitude of the voltage output from a digital to analog converter (162) is corrected to be at a level A in case of overflow and is corrected to be at a level -A in case of underflow. A delta value is stored in memory (768) and represents the gradient of the

waveform to be produced. This value is repetitively added in an accumulator and then subtracted to produce the desired waveform. Lange et al. fails to disclose that the memory stores a plurality of gradient data, each representing a local gradient of a single driving waveform (although plural gradient data representative of delta sizes of different amounts corresponding to **different** waveforms are taught in table I and III). Lange et al. fails to disclose that the digital to analog converter converts only specific upper columns in a result of summation of the accumulator.

Formal Matters

4. This application is in condition for allowance except for the following formal matters:

In the drawings:

Figures 14, 16A, 16B, 17A and 17B should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated as noted in the Brief Description of the Drawings. See MPEP § 608.02(g).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "65" has been used to designate both a data register (figure 7) and an anti-inversion circuit (figures 8 and 13).

Figure 8 is objected to because reference characters "46" and "66" should be noted as --46A-- and --66A-- as the related description indicates.

Figure 11 is objected to because reference characters "68a" and "67" should be noted as --68b-- and --67b-- as the related description indicates.

Figure 13 is objected to because reference character "46" should be noted as --46B-- as the related description indicates.

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In the claims:

In claim 1, line 7 and claim 10, line 11 "each calculation period" should more properly be referred to as --calculation periods-- since this is a new limitation and the specification of "each" implies that this limitation has antecedent basis.

In claim 6, lines 2-3 "..a preset range said within.." should more properly read -- ..a preset range set within..--.

In claim 7, line 8 "..an most.." should more properly read --..a most..--.

In claim 11, lines 4-5 "each preset calculation period" should more properly be referred to as --preset calculation periods-- since this is a new limitation and the specification of "each" implies that this limitation has antecedent basis.

Appropriate correction is required.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Reasons for Allowance

5. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the indication of the allowability of claims 1-10 is the inclusion therein, in combination as currently claimed, of the limitations of the digital-to-analog converter that converts only specific upper columns in a result of summation of the driving waveform gradient data and the correction unit that corrects the result of summation to a preset value under a specific condition. These limitations are found in claims 1-10 and is neither disclosed nor taught by the prior art of record, alone or in combination.

The primary reason for the indication of the allowability of claims 11-13 is the inclusion therein, in combination as currently claimed, of the limitations of converting only specific upper columns in a result of summation of the driving waveform gradient data and correcting the result of summation to a preset value under a specific condition. These limitations are found in claims 11-13 and is neither disclosed nor taught by the prior art of record, alone or in combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

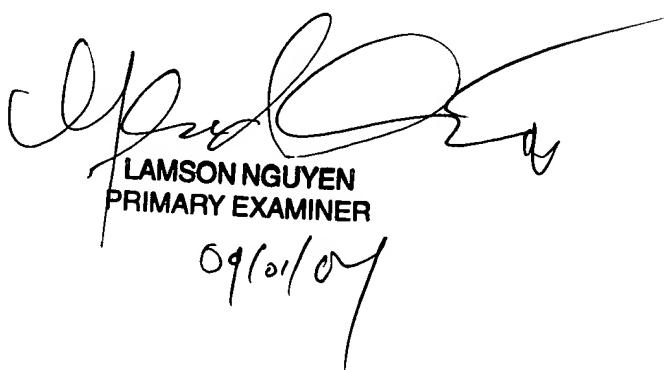
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet who may be reached at telephone number (571) 272-2150. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet September 1, 2004

BM 9/1/2004



LAMSON NGUYEN
PRIMARY EXAMINER
09/01/04